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Accelerating the use of behavioural science in climate policymaking

Summary report from a science-policy roundtable held 2 September 2025

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1 Introduction

In September 2025, ClimateXChange and the Scottish Government held a roundtable to discuss how the use of behavioural science can be embedded and accelerated in climate and environmental policymaking in the Scottish Government.

Significant behaviour change across the population is needed to reach Scotland's climate goals. This behaviour change is not currently happening at anywhere near the pace or scale required. Making better use of behavioural science in policymaking, through a fundamental re-think of how the Scottish Government makes policy for people, has the potential to make a meaningful difference.

The roundtable with academics and senior civil servants had the aim of identifying two or three new projects or approaches to trial in the Scottish Government over the next six months. This paper sets out the main discussion points, and the projects proposed.

Annex B sets out further background to the roundtable and the questions participants discussed.

2 Challenge 1: Prioritising where to embed behavioural science

2.1 Methods and principles for prioritising

There are very many behavioural changes needed to reach climate mitigation, adaptation, and biodiversity goals. These behaviours have various levels of impact, and some are harder for governments to enable than others. The policy process needs to prioritise the embedding of behavioural science and behavioural research accordingly.

Structured frameworks offer a robust way to assess and prioritise policy areas. For example, the 'APEASE' framework, considers Acceptability, Practicability (including whether there is

existing activity or insight to build on), Effectiveness (including whether policy can have meaningful influence on a behaviour), Affordability, Spill-over effects, and Equity. This framework could be adapted according to the Scottish Government context and priorities – for example, by giving particular weight to three considerations:

- **Climate and environment impact**: A part of 'effectiveness', this addresses the potential impact of behaviour change on reducing emissions, managing the impacts of climate change, and/or supporting biodiversity.
- **Behavioural plasticity**: A part of 'practicability', this is the extent to which behaviours can, feasibly, be changed. It includes a consideration of 'moments of change' – that is, key life transitions such as leaving home or retirement – when behaviours are more malleable and the potential of behavioural shifts can be maximised.
- **Just transition**: Perceived fairness is a key driver of policy acceptability, and just transition is central to both 'equity' and 'acceptability', and to Scottish Government's climate policies. Importantly, fairness means considering whether interventions ignore or exacerbate structural inequalities, not only whether they are impactful or feasible.

Prioritisation could also be tailored according to specific local contexts, for place-based behavioural solutions.

2.2 Policy sectors of note

Alongside these principles, participants identified the following policy areas as worthy of particular attention:

- **Agriculture and land management:** Changes in land practices can have significant benefits across climate mitigation, adaptation and biodiversity. Scotland also has a relatively small number of large, influential landowners. This makes targeted interventions potentially more feasible and impactful, on behaviours such as tree planting, water management, and peatland restoration and management.
- **Clean heating systems:** A widespread switch to heat pumps or other low emission heating would give significant emissions reductions, and the choice between heating systems is mostly presented as a household decision – albeit one affected by wider factors including affordability. Clean heat is also an opportunity for innovation and community or area-based solutions.
- **Electric vehicles:** Access to charging infrastructure and cost remain barriers to the uptake of electric vehicles, which should be prioritised for their significant potential to reduce emissions. This could also be an opportunity to explore behaviours around vehicle sharing.
- **Nature:** For many people in Scotland, ideas about nature are closely linked to their identity and pride – both of which can be critical drivers of behaviour change. There are therefore opportunities for using behavioural insights in interventions around eating venison to manage deer populations, 'greening' gardens, and improving access to nature through both 'green' and 'blue' spaces.
- **Reducing water consumption:** Household water use in Scotland exceeds other UK regions. Given Scotland's rainy climate, there is both low awareness of this issue and low motivation for change – despite areas of Scotland having experienced drought in recent years.

2.3 Proposed projects

Action 1:

Develop a prioritisation matrix that ranks policy areas and their corresponding behaviours, based on climate-adapted APEASE criteria.

3 Challenge 2: Engaging policymakers with behavioural evidence

3.1 Challenges and opportunities

Several significant reasons were identified for why behavioural science does not have a more central role in policymaking: a lack of clarity on the root causes of the policy problem; a lack of time available to consider behavioural insights; and a lack of capacity to analyse potentially conflicting evidence. Time pressures create a bottleneck where particularly senior leaders are unable to devote time and resource to consider the full breadth of available evidence to inform complex policy options. It can also be a challenge that behavioural science does not often lead to one clear policy option. Conversely, there is a need to increase capability among academics to present behavioural insights in a way which is useful within the complicated policymaking process.

This raises several opportunities: working to increase mutual understanding between policymakers and academics can help build relationships that survive the churn of officials, and can foster more widespread understanding of how to use behavioural evidence. This could also be pursued by 'raising the floor' across the board by increasing policymakers' understanding of and engagement with behavioural science. That would allow policymakers to better identify the behavioural components of their policy problems and communicate these to academics.

Finally, there is also an opportunity to find more effective means of distilling and sharing key evidence, by using trusted knowledge brokers to engage with senior leaders. For example, climate action can be politically difficult to drive, so storytelling approaches could be brought more into policymaking. This has the potential to better capture the public imagination and to use public participation and engagement to build trust and support for more contentious proposals.

Possible actions and approaches

Action 2:

Hold a **'mutual learning' workshop** between senior policymakers and behavioural researchers in a priority policy area (see Action 1). This session should cover fundamentals of 'the practical use of behavioural science in policymaking' and 'the realities of climate policymaking'. It should also include an exercise to identify short- and longer-term opportunities for collaboration.

Action 3:

Scope a project to **introduce oral history or storytelling expertise** as part of policy design and public engagement. The project would seek to understand the different ways that the sharing of stories, experiences and perspectives can have influence on policymaking, and on engagement with the public.

Action 4:

Scope the **secondment of an academic behavioural researcher** into the Climate Behaviours team (to start in spring 2026), being clear on the purpose. See Annex A for a case study of the secondment of a behavioural scientist into the Cabinet Office.

4 Challenge 3: Improving the evaluation of behavioural interventions

4.1 Challenges and opportunities

Evaluating the impact of behavioural interventions is important to generate evidence of what works, and why. However, it is challenging and resource-intensive to test and track the direct impact of policies on behaviours.

The fast-paced and non-linear nature of the policy cycle can be at odds with evaluation practice, as new priorities often emerge before there is time to assess the impact of existing interventions. In a policy environment where demonstrating short-term impact is important to justify investment, it can be difficult to pursue evaluations which seek to understand what works over time. It is often not possible to meaningfully demonstrate the effect of an intervention over a single electoral cycle.

When evaluations do occur, there can be an emphasis on demonstrating immediate impact, or solely proving which aims have been reached – rather than a more holistic focus on the wider changes which an intervention is contributing to. Indeed, articulating the relative contribution which an intervention has made is also a challenge.

Three practical elements can be the foundation for building evaluation practice into policymaking:

- A simple **theory of change** that clarifies how the intervention is expected to reach its desired objectives, and which is broadly understood by the policymakers and analysts involved.
- Clear, **evaluative questions** based on the theory of change, and a record of what is being achieved.
- **Proportionate data** to track each element – which incorporates (as appropriate) qualitative and quantitative data and is of 'good enough' quality.

A Bayesian approach – which looks at the accumulation of knowledge and learning – could help to guide evaluation strategies which span multiple, shorter-term interventions.

Whereas traditional evaluation methods use data to provide singular answers on the success (or not) of an intervention, Bayesian approaches suggest the confidence or likelihood of an intervention's success, based on both the data and what is already known.

4.2 Possible actions and approaches

Action 5:

Co-create theories of change for three priority policy areas (see Action 1), and collate the data to feed into this. Provide this in a simple, clear tool for each policy area, which also links to data sources for monitoring and evaluating impact.

Action 6:

Develop a short document with **'Key principles for behavioural evaluations'**, including principles, case studies from the Scottish Government's Centre of Expertise in Appraisal and Evaluation, and contact details for experienced individuals.

5 Taking action

The Scottish Government Climate Behaviours Team will take forward the projects and actions proposed in this roundtable summary. They will collaborate with and involve Scottish Government colleagues and other roundtable participants as relevant. The roundtable participants will be invited to a follow-up event in spring 2026 to take stock, and review and reflect on progress.

6 Annex A: Case study: Reviewing knowledge, skills and training needs across the Civil Service in behavioural research

Dr Marie-Louise Sharp is seconded to the Cabinet Office as part of the National Capability in Behavioural Research Programme (NCBR). Her secondment runs for four years from February 2025.

> "My fellowship workplan is to scope and develop training interventions to increase capability and upskill Civil Servants in their knowledge, skills, networks and use of behavioural research, with the intention of more systematically embedding behavioural research evidence and methods into policy, strategy and delivery processes in the work of Government in the future.
>
> "The first phase of the fellowship will focus on mapping behavioural research knowledge and capability in the Civil Service, whilst also scoping where gaps might be, and what training/interventions might be needed in the future to serve different groups in the Civil Service. These groups might cover behavioural research specialists, different professions, and those who commission behavioural research. It is also important to consider what baseline level of knowledge and training is needed for everyone to improve their behavioural literacy.
>
> "Additionally, the scoping work will look more broadly at systems and cultures within the Civil Service to identify both barriers and enablers of Civil Servants being able to apply behavioural research skills in their day-to-day practice. I will be looking at leadership and ultimately, with any intervention, where the most impact might occur from any upskilling programme.

Dr Sharp is seconded from the Centre for National Training and Research Excellence for Understanding Behaviour (Centre-UB) hosted by the University of Birmingham as part of a £17m investment from ESRC into Behavioural Research in the UK

7 Annex B: Roundtable pre-read

Accelerating the use of behavioural science in climate policymaking

A pre-read for participants in the roundtable on 2 September 2025

Professor Linda Bauld, Professor Lorraine Whitmarsh and Professor Paul Cairney

1 Key points: Why are we holding this roundtable?

The focus: This roundtable will discuss how the use of behavioural science can be embedded and accelerated in climate and environmental policymaking in the Scottish Government (SG).

The context: Scotland will not reach our climate goals without significant behaviour change across the population. This behaviour change is not currently happening at anywhere near the pace or scale required. Making better use of behavioural science in policymaking, through a fundamental re-think of how we make policy for people, has the potential to make a meaningful difference to how we work on climate as a government. Despite the abundance of behavioural research and strong evidence of its value to policymakingi, only a fraction comes to influence policy choices. Significant hurdles to embedding behavioural science in climate policy remain.

The challenge: This roundtable with academics and senior civil servants aims to identify two or three new projects or approaches to trial in SG over the next six months. Together, we will consider how we prioritise action where it is needed most; how to overcome the challenge of making evidence more accessible and usable to policymakers, and how to empower them to use it effectively; and to better demonstrate of the impact of behaviour change via a more systematic use of evaluation. **Participants are asked to consider examples that have worked well and what factors made them successful, as well as lessons learned from examples that did not cut through.**

Specifically, we'll discuss three challenges – each time asking, '*What can we try in the next six months to address this?*':

- There are very many behavioural changes needed to reach SG's climate mitigation, adaptation, and biodiversity goals. These behaviours have various levels of impact, and some are harder for SG to enable than others. We need to prioritise the embedding of behavioural science accordingly.
- Not enough policymakers in Scottish Government are seeking out behavioural evidence and expertise when making climate and environment policy. The evidence they do find is often densely academic and hard to apply.
- Evaluating the impact of behavioural interventions is important for generating evidence of what works, and why. However, it is challenging and resource-intensive to test and track the direct impact of our policies on behaviours.

The following paper sets out the context for this roundtable.

2 What do we mean by 'behavioural science' and 'behaviour change interventions'?

Behavioural science (or 'behavioural research') is the study of how people behave and make decisions. Using data, behavioural research seeks to understand what drives people's actions. This includes individual, social and material factors. It is a multidisciplinary field that examines human behaviour by combining insights from a range of academic disciplines including psychology, sociology, neuroscience, economics and others.

Behaviour change interventions are a coordinated set of activities designed to change specified behaviour patterns – these patterns that are measured in terms of the prevalence or incidence of particular behaviours in specified populations.ii Behaviour change interventions need to take into account individual factors (capability and motivation) but also, importantly, context (social and environmental factors).[iii]

3 Why is behavioural science particularly important in climate policymaking?

Scotland will not reach our climate goals without significant behaviour change across the population. This behaviour change is not currently happening at anywhere near the pace or scale required. To reach net zero by 2045, we need car use to reduce significantly (by at least 20%) and for almost every new car sold to be electric (currently, it's 1 in 7); we need 92% of homes to have installed clean heating (currently, it's 11%); we need land managers to be planting more trees and to be restoring and maintaining two-thirds of our peatland (currently, it's less than one-third).

The First Minister's Environment Council recently recommended that the SG accelerates the use of behavioural techniques in climate policy. Importantly, this does not mean locating responsibility for these changes with individuals – policies are needed that remove the barriers to action. Behavioural science can increase the chance that 'the public' accept and co-operate with policies.

Understanding behaviour is relevant for all stages of the climate policymaking cycle, from problem definition to evaluation. For example:

- At the problem definition or agenda-setting stage, important behavioural questions need to be asked, including, which behaviours and whose behaviour does the policy seek to address/reach/change.
- During policy formulation, consideration of how alternatives will affect behaviour is important, as it is when considering policy alternatives and policy design.
- During implementation, the success of a policy is often determined by behaviour (by governments, delivery partners, and communities affected).
- Including behavioural research in the evaluation can support our understanding of whether the policy succeeded or failed or how it can be improved in future.

Behavioural science is of course not a silver bullet, leading to one clear policy option. Policy choices will still be complex and difficult, but by using evidence from behavioural research and insights, these choices will be more fully informed, and decisions will have a greater chance of succeeding.

4 How does SG currently use behavioural science in climate policymaking?

Many climate and environment policymakers use 'person-centred' principles in their work and intuitively think about citizens' behaviours. SG has dedicated resource to ensure that this work is consistent, well-documented, and using the latest behavioural insights.

4.1 SG has a 'Climate Behaviours' team of four people

Their role is to support SG policymakers and partners to use the latest behavioural insights when developing and delivering climate change policy and projects. They have worked closely with 12 policy teams and with external partners; support a cross-directorate Climate Behaviours network; routinely share latest behavioural evidence with policymakers; and deliver a nationwide climate marketing campaign each year. The team's recent projects include:

- co-designing 10 new behavioural interventions to enable more farmers to plant trees, which agriculture colleagues are now working to deliver
- conducting a 'sludge audit' of the heat pump grant and loan scheme, in order to increase the number of people installing heat pumps
- overseeing the design of a behaviourally-informed Household Flood Plan template, to enable more people at risk to prepare for flooding.

4.2 Central behavioural expertise

To support behavioural science in policymaking more broadly, SG seconds behavioural researcher Professor Linda Bauld as Chief Social Policy Adviser. There is also a team of three social researchers within Central Analysis Division (CAD) who support a cross-government 'Behavioural Insight Network'. Professor Bauld and these social researchers (with support from others including academics) have developed a Behavioural Science Toolkit that is available via SG's internal learning portal. CAD colleagues and Professor Bauld, working with SG communications and others, also contribute to UK and international networks on behavioural science in health.

4.3 Enabling the uptake of behavioural science

- In the Climate Behaviours team's experience factors which best enable the uptake of behavioural science are: Dedicated capacity to stay abreast of latest behavioural insights and identify timely opportunities for these to be applied to government's strategic priorities (i.e. in areas with momentum and decisions to be made);
- Buy-in and attention from senior leaders who give policymakers the mandate to dedicate time and resources to behavioural work; and strong working relationships between grassroots policymakers and the Climate Behaviours team, collaborating on discrete projects through in-person workshops to build capacity and relationships.

5 Why is it difficult to embed behavioural science in climate policymaking?

There are significant hurdles to embedding behavioural science in climate policy. Behavioural science is an evolving and multidisciplinary field, and behaviour changes can be slow and difficult to measure, often making it costly to evaluate interventions and to learn what works.

Added to this, climate policy is highly cross-sectoral, politically sensitive and operates in a complex global landscape. A systemic approach to climate policy is needed to address the multiple factors that shape society. This combines regulation, infrastructure and market incentives (upstream interventions) with development of skills and services (mid-stream), and communication and engagement with communities, businesses and individuals (downstream).[iv] Governments tend to focus on individual-level rather than system-level interventions. This 'downstream' focus can exacerbate inequalities by not removing structural barriers to action. Effective interventions tackle institutional barriers, skills gaps and power structures.

Despite the abundance of behavioural research, only a fraction comes to influence policy choices. Findings are context-dependent so conclusions can be contradictory, e.g. 'the best mode of communicating about climate change depends on the audience'. This can make it difficult for policymakers to find the top line or overall narrative and prioritise actions.

Conclusions from behavioural research can be broad principles for good practice. Policymakers sometimes struggle to relate that to their specific policy context or issue. Additionally behavioural studies may not measure economic aspects of an intervention, which are often important to policymakers.

Further to this, the Scottish Government Climate Behaviours team have identified the following primary challenges to their work**:**

- Low awareness of behavioural science as a tool, and misunderstanding at all levels of government as to what it offers. There are widespread misconceptions that enabling behaviour change is the work of communications, is simply about 'nudges' (when it is much broader than that), or that the tools are complex and inaccessible to policymakers.
- Few senior leaders are calling for climate behavioural work meaning few policymakers feel they can dedicate resources for 'nice to have' behaviours work.
- There are no mechanisms for systematically requiring behavioural evidence in policymaking.

6 What are the barriers to using evidence in policymaking?

A wealth of research demonstrates an often-large and enduring gap between the supply and demand for research evidence in policy making. These challenges are not exclusive to behavioural science – there are barriers (and enablers) to the full use of all types of evidence in policymaking. There are no simple and obvious solutions to this problem. Rather, we focus on how to understand and respond to three general issues:

6.1 Limited coordination and control over policy outcomes

Simple aspirational models of policymaking give the impression of an orderly cycle of activity coordinated from a government, with clear opportunities to use evidence when defining a problem, generating solutions, and evaluating outcomes.

Real-world policymaking involves policy outcomes that emerge from the interaction between many choices made at different times by many different policymaking organisations, making it difficult for researchers to know where and when to act to make an impact with evidence. This issue has prompted attention to a range of approaches and aims to foster policymaking integration, policy coherence, or systems approaches to problems and policymaking.

6.2 Limited agreement on what counts as 'the evidence'

If you engage with a diverse range of researchers and policymakers, you will find a range of ideas on what constitutes good evidence. For example, there is debate within research about what constitutes high quality evidence and which methods to prioritise. Policymakers and researchers may also prioritise different criteria to determine usability, such as to emphasise the methods to produce and evaluate evidence or its timeliness, brevity, and relevance to policy agendas.

6.3 Limited resources to gather, understand, and use evidence for policy

Researchers often describe filling gaps in knowledge with more information, to reduce policy uncertainty by improving our understanding of the technical feasibility of solutions. Time-pressed policymakers need reliable ways to filter out most information, seeking a small number of routinely trusted sources. They also use their values or beliefs to reduce policy ambiguity (which describes many ways to interpret the same problem) and seek to engage with a diverse range of stakeholders to improve the political feasibility of solutions. Hence, the disconnect can relate to different activities: researchers seeking more effective ways to communicate technically feasible solutions; and policymakers seeking solutions that would work politically as well as technically.

7 Appendix A – For those less well-versed in behavioural science: How is behavioural science used in policymaking?

7.1 To inform different scopes of policy

- Behavioural intervention: Behavioural science can be used to target individual actions through behavioural interventions.
- Single policy: It can support the development of individual policy tools, by guiding policy choice and design with an understanding of behavioural factors.
- Policy mix: It can align multiple policy tools to work together towards a shared objective, informed by relevant behavioural factors.
- System: And behavioural science can be used to pinpoint leverage points to achieve a more cohesive, well-functioning system.

7.2 To inform different stages in the policymaking cycle

When designing policy, we can use evidence to identify the behavioural changes which can benefit our society, and which we can fairly ask the public to make. We can use behavioural models to design policies and policy mixes which are most likely to be effective.

For example: The *Behaviour Change Wheel* [v] sets out the full range of policy levers which can be pulled to enable behaviour change. It suggests that multiple policy levers are necessary, without over-reliance on one.

When delivering policy, behavioural models help us understand the barriers preventing people from responding the way we intended them to. They help us to see how to overcome those barriers and to course-correct.

For example: The *EAST Framework* [vi] proposes that policy needs to make a behaviour Easy, Attractive, Social and Timely. If a policy isn't achieving each one, then gaps should be addressed.

When evaluating policy, behavioural data can be used to measure impact, and to understand the reasons for that.

For example: The *COM-B Model* [vii] proposes that people need Capability, Opportunity and Motivation in order to act. We can measure each of these through surveys and focus groups, to help understand levels of uptake of the desired behaviour.

7.3 To inform different types of policy

Behavioural science sets our policy as being Upstream, Midstream, or Downstream:

- **Upstream (e.g.** focusing on systemic and structural factors at societal level)
- **Midstream** (targeting the context and environment to make positive behaviours easier and more likely)
- **Downstream** (addressing individual behaviours and providing targeted support to those who need it)

7.4 To enable systems thinking

By combining evidence on individual behavioural factors and influences with an understanding of the context within which behaviours occur and the dynamic interactions and feedback loops within complex systems[viii].

Endnotes to Annex B

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